MORGAN
MÜNCHEN
CATERING EQUIPMENT

# 93000 Series Spiral Mixer

# User Manual

# Spiral Mixer User Manual

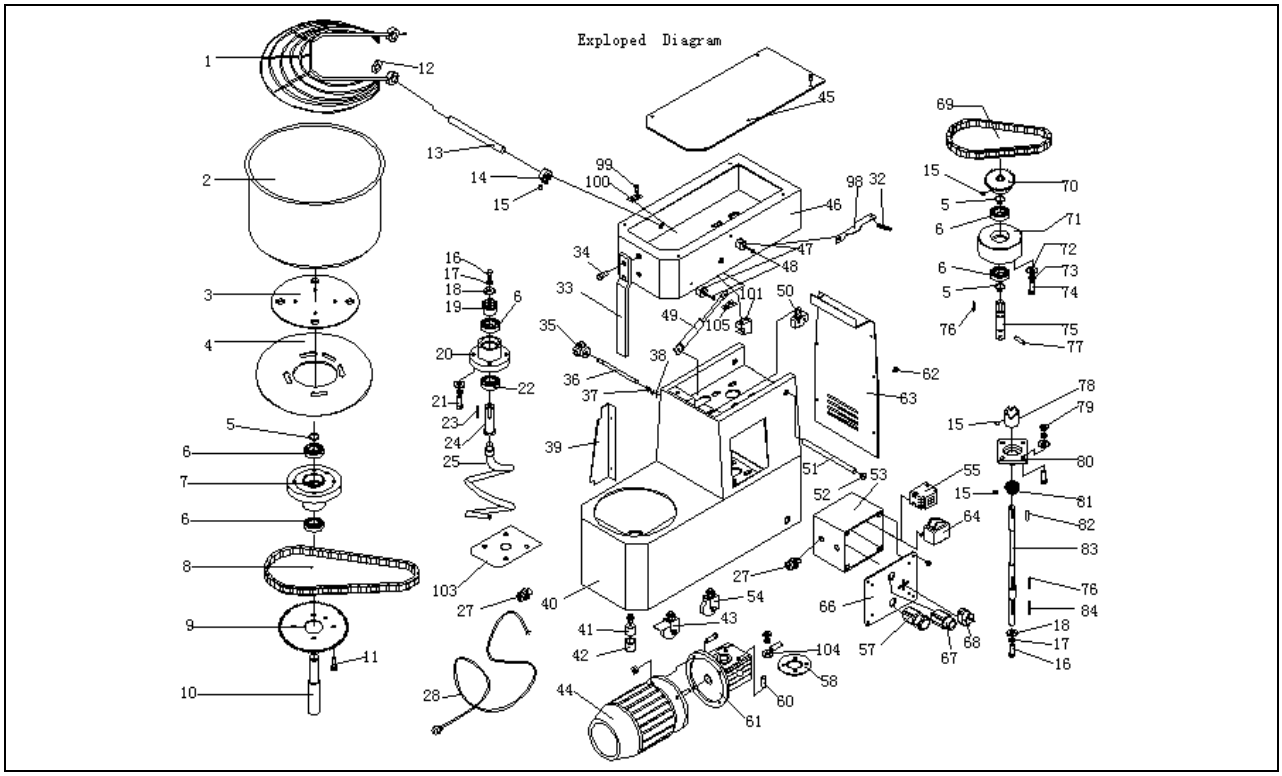
**Index:**


1. **Machine illustration diagram & Part list**
2. **Warning**
3. **Installation instruction**
4. **Operation instruction**
5. **Maintenance**
6. **Trouble shooting**
7. **Specification**
8. **Electrical drawing**
9. **EC declaration of conformity**


**ATTENTION: Please read this manual before operating the machine.**

# 1. Machine illustration diagram & Part list

## 1.1 930002T/M 930004/5T illustration diagram & Part list




**930002M/T Part List**

| Item | Description | Qty | Part no. | | Remark |
|---|---|---|---|---|---|
| | | | 930002M | 930002T | |
| 1 | Safety guard | 1 | 22-224 | 22-224 | |
| 2 | Bowl | 1 | 22-006 | 22-006 | |
| 3 | Bowl Flange | 1 | 22-022 | 22-022 | |
| 4 | Locking Flange | 1 | 22-008 | 22-008 | |
| 5 | Transit ring | 3 | 22-053 | 22-053 | |
| 6 | Bearing 6205 | 5 | 22-055 | 22-055 | |
| 7 | Bearing support | 1 | 22-019 | 22-019 | |
| 8 | Chain 126 | 1 | 22-041 | 22-041 | |
| 9 | Chain wheel 72 | 1 | 22-042 | 22-042 | |
| 10 | Support axle | 1 | 22-015 | 22-015 | |
| 11 | Screw | 4 | 22-062 | 22-062 | |
| 12 | Guard ring | 2 | 22-035 | 22-035 | |
| 13 | Guard axle | 1 | 22-225 | 22-225 | |
| 14 | Off-set ring | 1 | 22-173 | 22-173 | |
| 15 | Screw | 12 | 22-073 | 22-073 | |
| 16 | Screw | 4 | 22-064 | 22-064 | |
| 17 | Spring washer | 15 | 22-090 | 22-090 | |
| 18 | Washer | 15 | 22-084 | 22-084 | |
| 19 | Chain wheel 15 | 1 | 22-043 | 22-043 | |
| 20 | Spiral support | 1 | 22-020 | 22-020 | |
| 21 | Screw | 4 | 22-063 | 22-063 | |
| 22 | Bearing 6205 | 1 | 22-055 | 22-055 | |
| 23 | Key | 1 | 22-059 | 22-059 | |
| 24 | Mixing Axle | 1 | 22-018 | 22-018 | |

| Item | Description | Qty | Part no. | | Remark |
|---|---|---|---|---|---|
| | | | 930002M | 930002T | |
| 25 | Spiral | 1 | 22-004 | 22-004 | |
| 27 | Cable fixer | 1 | 22-110 | 22-110 | |
| 28 | Cable | 1 | 22-086 | 22-125 | |
| 29 | Screw | 4 | 22-077 | 22-077 | |
| 32 | spring | 1 | 22-052 | 22-052 | |
| 33 | Divider | 1 | 22-003 | 22-003 | |
| 34 | Screw | 2 | 22-061 | 22-061 | |
| 35 | Locker | 1 | 22-048 | 22-048 | |
| 36 | Lock axle | 1 | 22-232 | 22-232 | |
| 37 | lock spring | 1 | 22-049 | 22-049 | |
| 38 | key | 1 | 22-050 | 22-050 | |
| 39 | Side cover | 1 | 22-229 | 22-229 | |
| 40 | Structure | 1 | 22-222 | 22-222 | |
| 41 | foot | 4 | 22-033 | 22-033 | |
| 42 | Rubber shoe | 4 | 22-034 | 22-034 | |
| 43 | Wheel with stopper | 2 | 22-031 | 22-031 | |
| 44 | Motor | 1 | 22-152 | 22-046 | |
| 45 | Top cover | 1 | 22-230 | 22-230 | |
| 46 | Head | 1 | 22-223 | 22-223 | |
| 47 | Nylon ring | 2 | 22-029 | 22-029 | |
| 48 | Screw | 4 | 22-070 | 22-070 | |
| 49 | Air spring | 1 | 22-051 | 22-051 | |
| 50 | Micro switch | 1 | 22-079 | 22-079 | |
| 51 | Head axle | 1 | 22-271 | 22-271 | |
| 52 | Nylon cover | 2 | 22-030 | 22-030 | |
| 53 | Electrical box | 1 | 22-233 | 22-233 | |
| 54 | Wheel | 2 | 22-032 | 22-032 | |
| 55 | Contactor | 1 | 22-155 | 22-155 | |
| 57 | Emergency stop | 1 | 22-099 | 22-099 | |
| 58 | Transit ring | 1 | 22-093 | 22-093 | |
| 60 | Screw | 8 | 22-072 | 22-072 | |
| 61 | Gear box | 1 | 22-074 | 22-074 | |
| 62 | Screw | 14 | 22-068 | 22-068 | |
| 63 | Back cover | 1 | 22-231 | 22-231 | |
| 64 | Transformer | 1 | 22-154 | 22-107 | |
| 66 | Electrical panel | 1 | 22-228 | 22-228 | |
| 67 | Start Switch | 1 | 22-100 | 22-100 | |
| 68 | Timer | 1 | 22-103 | 22-103 | |
| 69 | Chain | 1 | 22-056 | 22-056 | |
| 70 | Chain wheel 29 | 1 | 22-045 | 22-045 | |
| 71 | Bearing Connector | 1 | 22-021 | 22-021 | |
| 72 | Washer | 12 | 22-083 | 22-083 | |

| Item | Description | Qty | Part no. | | Remark |
|---|---|---|---|---|---|
| | | | 930002M | 930002T | |
| 73 | Spring washer | 8 | 22-089 | 22-089 | |
| 74 | Screw | 8 | 22-060 | 22-060 | |
| 75 | Connector axle | 1 | 22-017 | 22-017 | |
| 76 | Key | 2 | 22-055 | 22-055 | |
| 77 | Connector key | 1 | 22-024 | 22-024 | |
| 78 | Engager | 1 | 22-026 | 22-026 | |
| 79 | Screw | 4 | 22-076 | 22-076 | |
| 80 | Round bearing support | 1 | 22-054 | 22-054 | |
| 81 | Wheel 14 | 1 | 22-044 | 22-044 | |
| 82 | key | 1 | 22-055 | 22-055 | |
| 83 | Transmission axles | 1 | 22-016 | 22-016 | |
| 84 | Key | 1 | 22-057 | 22-057 | |
| 98 | Lever | 1 | 22-172 | 22-172 | |
| 99 | Screw | 10 | 22-180 | 22-180 | |
| 100 | Hook divider | 1 | 22-185 | 22-185 | |
| 101 | Locking hook | 1 | 22-161 | 22-161 | |
| 103 | Water shield | 1 | 22-187 | 22-187 | |
| 104 | Adjusting screw | 2 | 22-192 | 22-192 | |
| 105 | Hook washer | | 22-193 | 22-193 | |

## 930004T Part List

| Item | Description | Qty | 930004T |
|---|---|---|---|
| 1 | Safety guard | 1 | 33-079 |
| 2 | Bowl | 1 | 33-081 |
| 3 | Bowl Flange | 1 | 22-022 |
| 4 | Locking Flange | 1 | 42-005 |
| 5 | Transit ring | 3 | 22-053 |
| 6 | Bearing 6205 | 5 | 22-055 |
| 7 | Bearing support | 1 | 22-019 |
| 8 | Chain 126 | 1 | 22-041 |
| 9 | Chain wheel 72 | 1 | 22-042 |
| 10 | Support axle | 1 | 22-015 |
| 11 | Screw | 4 | 22-062 |
| 12 | Guard ring | 2 | 22-035 |
| 13 | Guard axle | 1 | 22-225 |
| 14 | Off-set ring | 1 | 22-173 |
| 15 | Screw | 12 | 22-073 |

| Item | Description | Qty | 930004T |
|---|---|---|---|
| 16 | Screw | 4 | 22-064 |
| 17 | Spring washer | 15 | 22-090 |
| 18 | Washer | 15 | 22-084 |
| 19 | Chain wheel 15 | 1 | 22-043 |
| 20 | Spiral support | 1 | 22-020 |
| 21 | Screw | 4 | 22-063 |
| 22 | Bearing 6205 | 1 | 22-055 |
| 23 | Key | 1 | 22-059 |
| 24 | Mixing Axle | 1 | 22-018 |
| 25 | Spiral | 1 | 22-004 |
| 27 | Cable fixer | 1 | 22-110 |
| 28 | Cable | 1 | 22-125 |
| 29 | Screw | 4 | 22-077 |
| 32 | spring | 1 | 22-052 |
| 33 | Divider | 1 | 22-003 |

| Item | Description | Qty | 930004T |
|---|---|---|---|
| 34 | Screw | 2 | 22-061 |
| 35 | Locker | 1 | 22-048 |
| 36 | Lock axle | 1 | 22-232 |
| 37 | lock spring | 1 | 22-049 |
| 38 | key | 1 | 22-050 |
| 39 | Side cover | 1 | 22-272 |
| 40 | Structure | 1 | 33-078 |
| 41 | foot | 4 | 22-033 |
| 42 | Rubber shoe | 4 | 22-034 |
| 43 | Wheel with stopper | 2 | 22-031 |
| 44 | Motor | 1 | 22-046 |
| 45 | Top cover | 1 | 22-230 |
| 46 | Head | 1 | 22-223 |
| 47 | Nylon ring | 2 | 22-029 |
| 48 | Screw | 4 | 22-070 |
| 49 | Air spring | 1 | 22-051 |
| 50 | Micro switch | 1 | 22-079 |
| 51 | Head axle | 1 | 22-271 |
| 52 | Nylon cover | 2 | 22-030 |
| 53 | Electrical box | 1 | 22-233 |
| 54 | Wheel | 2 | 22-032 |
| 55 | Contactor | 1 | 22-155 |
| 57 | Emergency stop | 1 | 22-099 |
| 58 | Transit ring | 1 | 22-093 |
| 60 | Screw | 8 | 22-072 |
| 61 | Gear box | 1 | 22-074 |
| 62 | Screw | 14 | 22-068 |
| 63 | Back cover | 1 | 22-231 |
| 64 | Transformer | 1 | 22-107 |

| Item | Description | Qty | 930004T |
|---|---|---|---|
| 66 | Electrical panel | 1 | 22-228 |
| 67 | Start Switch | 1 | 22-100 |
| 68 | Timer | 1 | 22-103 |
| 69 | Chain | 1 | 22-056 |
| 70 | Chain wheel 29 | 1 | 22-045 |
| 71 | Bearing Connector | 1 | 22-021 |
| 72 | Washer | 12 | 22-083 |
| 73 | Spring washer | 8 | 22-089 |
| 74 | Screw | 8 | 22-060 |
| 75 | Connector axle | 1 | 22-017 |
| 76 | Key | 2 | 22-055 |
| 77 | Connector key | 1 | 22-024 |
| 78 | Engager | 1 | 22-026 |
| 79 | Screw | 4 | 22-076 |
| 80 | Round bearing support | 1 | 22-054 |
| 81 | Wheel 14 | 1 | 22-044 |
| 82 | key | 1 | 22-055 |
| 83 | Transmission axles | 1 | 22-016 |
| 84 | Key | 1 | 22-057 |
| 98 | Lever | 1 | 22-172 |
| 99 | Screw | 10 | 22-180 |
| 100 | Hook divider | 1 | 22-185 |
| 101 | Locking hook | 1 | 22-161 |
| 103 | Water shield | 1 | 22-187 |
| 104 | Adjusting screw | 2 | 22-192 |
| 105 | Hook washer | | 22-193 |
| | | | |
| | | | |

## 930005T Part List

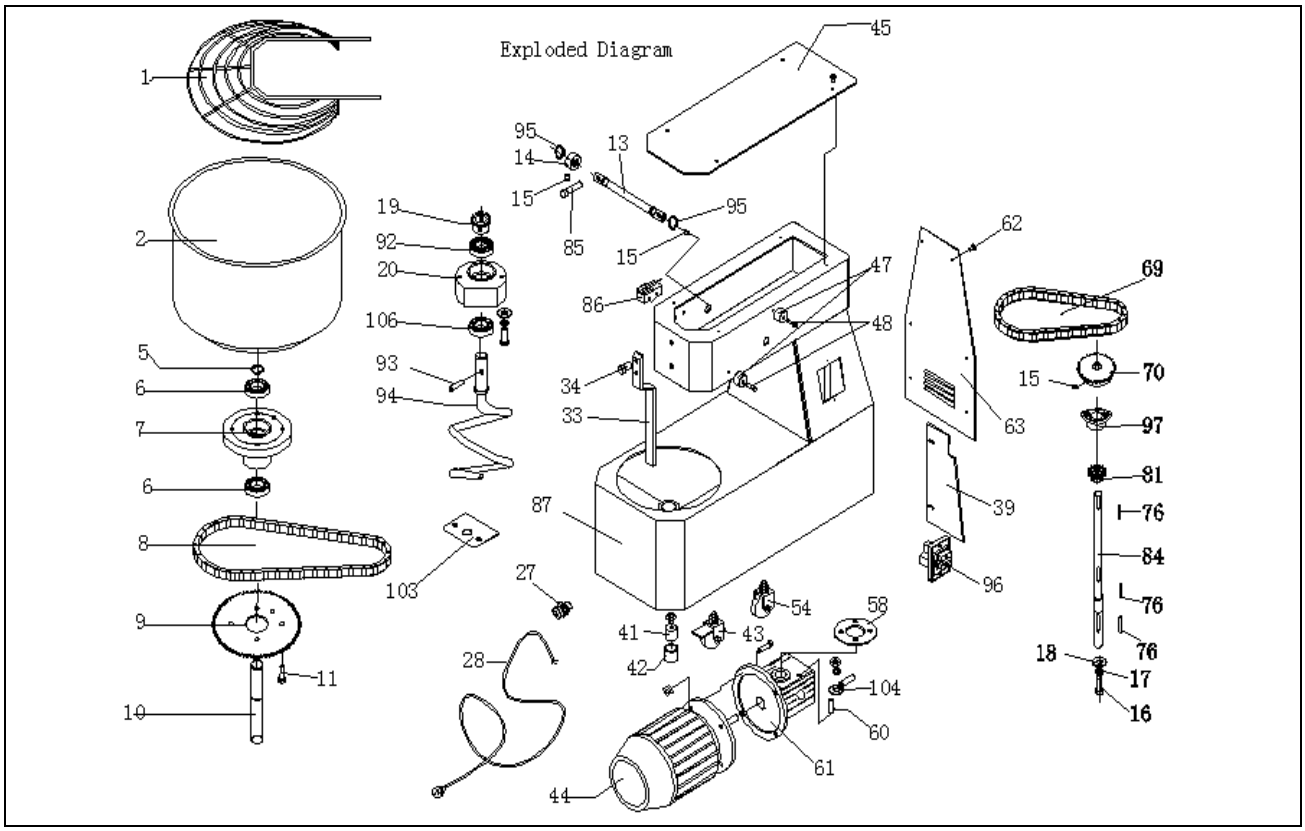
| Item | Description | Qty | 930005T |
|---|---|---|---|
| 1 | Safety guard | 1 | 42-012 |
| 2 | Bowl | 1 | 42-002 |
| 3 | Bowl Flange | 1 | 22-022 |
| 4 | Locking Flange | 1 | 42-005 |
| 5 | Transit ring | 3 | 22-053 |
| 6 | Bearing 6205 | 5 | 22-055 |
| 7 | Bearing support | 1 | 22-019 |

| Item | Description | Qty | 930005T |
|---|---|---|---|
| 8 | Chain144 | 1 | 33-027 |
| 9 | Chain wheel 85 | 1 | 33-029 |
| 10 | Support axle | 1 | 22-015 |
| 11 | Screw | 4 | 22-062 |
| 12 | Guard ring | 2 | 22-035 |
| 13 | Guard axle | 1 | 42-013 |
| 14 | Off-set ring | 1 | 22-173 |

| Item | Description | Qty | 930005T |
|---|---|---|---|
| 15 | Screw | 12 | 22-073 |
| 16 | Screw | 4 | 22-064 |
| 17 | Spring washer | 15 | 22-090 |
| 18 | Washer | 15 | 22-084 |
| 19 | Chain wheel 15 | 1 | 33-031 |
| 20 | Spiral support | 1 | 33-018 |
| 21 | Screw | 4 | 22-063 |
| 22 | Bearing 6006 | 1 | 33-036 |
| 23 | Key | 1 | 33-038 |
| 24 | Mixing Axle | 1 | 33-017 |
| 25 | Spiral | 1 | 33-004 |
| 27 | Cable fixer | 1 | 22-110 |
| 28 | Cable | 1 | 22-125 |
| 32 | spring | 1 | 22-052 |
| 33 | Divider | 1 | 42-001 |
| 34 | Screw | 2 | 22-061 |
| 35 | Locker | 1 | 22-048 |
| 36 | Lock axle | 1 | 42-014 |
| 37 | lock spring | 1 | 22-049 |
| 38 | key | 1 | 22-050 |
| 39 | Side cover | 1 | 33-115 |
| 40 | Structure | 1 | 42-010 |
| 41 | foot | 4 | 33-024 |
| 42 | Rubber shoe | 4 | 22-034 |
| 43 | Wheel with stopper | 2 | 33-022 |
| 44 | Motor | 1 | 33-033 |
| 45 | Top cover | 1 | 42-015 |
| 46 | Head | 1 | 42-011 |
| 47 | Nylon ring | 3 | 22-029 |
| 48 | Screw | 4 | 22-070 |
| 49 | Air spring | 1 | 22-051 |
| 50 | Micro switch | 1 | 22-079 |
| 51 | Head axle | 1 | 22-271 |
| 52 | Nylon cover | 2 | 33-115 |
| 53 | Electrical box | 1 | 22-096 |

| Item | Description | Qty | 930005T |
|---|---|---|---|
| 54 | Wheel | 2 | 33-023 |
| 55 | Contractor | 1 | 22-155 |
| 57 | Emergency stop | 1 | 22-099 |
| 58 | Transit ring | 1 | 33-042 |
| 60 | Screw | 8 | 22-072 |
| 61 | Gear box | 1 | 33-034 |
| 62 | Screw | 14 | 22-068 |
| 63 | Back cover | 1 | 42-016 |
| 64 | Transformer | 1 | 22-107 |
| 66 | Electrical panel | 1 | 22-097 |
| 67 | Start Switch | 1 | 22-100 |
| 69 | Chain | 1 | 42-007 |
| 70 | Chain wheel 29 | 1 | 33-032 |
| 71 | Bearing Connector | 1 | 33-019 |
| 72 | Washer | 12 | 22-083 |
| 73 | Spring washer | 8 | 22-089 |
| 74 | Screw | 8 | 22-060 |
| 75 | Connector axle | 1 | 33-016 |
| 76 | Key | 2 | 22-055 |
| 77 | Connector key | 1 | 22-024 |
| 78 | Engager | 1 | 33-020 |
| 79 | Screw | 4 | 22-076 |
| 80 | Round bearing support | 1 | 33-035 |
| 81 | Wheel 16 | 1 | 33-030 |
| 82 | key | 1 | 33-039 |
| 83 | Transmission axles | 1 | 33-015 |
| 84 | Key | 1 | 22-057 |
| 98 | Lever | 1 | 22-172 |
| 99 | Screw | 10 | 22-181 |
| 100 | Hook divider | 1 | 22-185 |
| 101 | Locking hook | 1 | 22-161 |
| 103 | Water shield | 1 | 33-062 |
| 104 | Adjusting screw | 1 | 22-192 |
| 105 | Hook washer | | 22-193 |
| | | | |

## 1.2 930001M/T illustration diagram & Part list

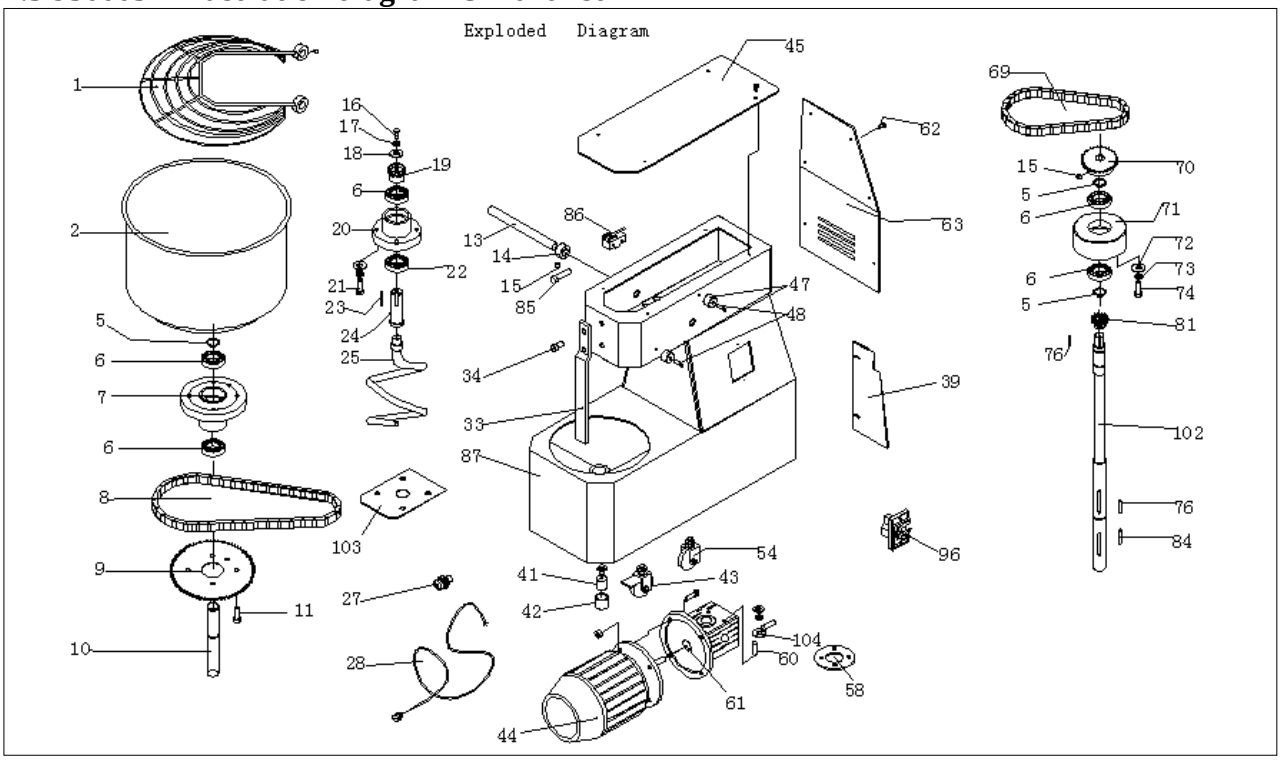



**930001M/T Part List**

| Item | Description | Qty | Part no. | | Remark |
|---|---|---|---|---|---|
| | | | 930001T | 930001M | |
| 1 | Safety guard | 1 | 10-091 | 10-091 | |
| 2 | Bowl | 1 | 22-006 | 22-006 | |
| 5 | Transit ring | 2 | 10-023 | 10-023 | |
| 6 | Bearing 6204 | 2 | 10-025 | 10-025 | |
| 7 | Bearing support | 1 | 10-012 | 10-012 | |
| 8 | Chain 102 | 1 | 10-017 | 10-017 | |
| 9 | Chain wheel 50 | 1 | 10-016 | 10-016 | |
| 10 | support axle | 1 | 10-009 | 10-009 | |
| 11 | screw | 4 | 22-064 | 22-064 | |
| 13 | Guard axle | 1 | 10-010 | 10-010 | |
| 14 | ring | 1 | 22-145 | 22-145 | |
| 15 | Screw | 2 | 10-037 | 10-037 | |
| 16 | screw | 6 | 22-063 | 22-063 | |
| 17 | Spring washer | 10 | 22-090 | 22-090 | |
| 18 | Washer | 12 | 22-085 | 22-085 | |
| 19 | Chain wheel 11 | 1 | 10-019 | 10-019 | |
| 20 | spring support | 1 | 10-013 | 10-013 | |
| 27 | Cable fixer | 1 | 22-110 | 22-110 | |
| 28 | Cable | 1 | 22-125 | 10-028 | |

| Item | Description | Qty | Part no. | | Remark |
|---|---|---|---|---|---|
| | | | 930001T | 930001M | |
| 33 | Divider | 1 | 10-092 | 10-092 | |
| 34 | screw | 2 | 10-035 | 10-035 | |
| 39 | side cover | 1 | 10-093 | 10-093 | |
| 41 | Foot | 4 | 22-033 | 22-033 | |
| 42 | rubber shoe | 4 | 22-034 | 22-034 | |
| 43 | Wheel with stopper | 2 | 22-031 | 22-031 | |
| 44 | Motor | 1 | 10-101 | 10-020 | |
| 45 | Top cover | 1 | 10-004 | 10-004 | |
| 47 | Nylon ring | 2 | 22-029 | 22-029 | |
| 48 | screw | 4 | 22-070 | 22-070 | |
| 54 | Wheel | 2 | 22-032 | 22-032 | |
| 58 | Transit ring | 1 | 10-022 | 10-022 | |
| 60 | screw | 4 | 10-034 | 10-034 | |
| 61 | Gear box | 1 | 10-021 | 10-021 | |
| 62 | screw | 12 | 22-068 | 22-068 | |
| 63 | Back cover | 1 | 10-002 | 10-002 | |
| 69 | Chain | 1 | 10-094 | 10-094 | |
| 70 | Chain wheel 29 | 1 | 22-045 | 22-045 | |
| 76 | Key | 3 | 22-056 | 22-056 | |
| 81 | Chain wheel 14 | 1 | 22-044 | 22-044 | |
| 84 | Transmission axles | 1 | 10-011 | 10-011 | |
| 85 | screw | 1 | 10-031 | 10-031 | |
| 86 | Micro switch | 1 | 22-094 | 22-094 | |
| 87 | Structure | 1 | 10-095 | 10-095 | |
| 92 | Bearing 6202 | 1 | 10-026 | 10-026 | |
| 93 | Connector axle | 1 | 10-015 | 10-015 | |
| 94 | Spiral | 1 | 10-008 | 10-008 | |
| 95 | Transit ring | 2 | 10-024 | 10-024 | |
| 96 | Control switch | 1 | 10-096 | 10-029 | |
| 97 | Round bearing support | 1 | 10-014 | 10-014 | |
| 103 | Water shield | 1 | 10-097 | 10-097 | |
| 104 | Adjusting screw | 2 | 10-042 | 10-042 | |
| 106 | Bearing 6202 | 1 | 10-026 | 10-026 | |

## 1.3 930003T illustration diagram & Part list




**930003T Part List**

| Item | Description | Qty | 930003T |
|---|---|---|---|
| 1 | Safety guard | 1 | 33-087 |
| 2 | Bowl | 1 | 33-078 |
| 5 | Transit ring | 2 | 22-053 |
| 6 | Bearing 6205 | 5 | 22-055 |
| 7 | Bearing support | 1 | 22-019 |
| 8 | Chain126 | 1 | 22-041 |
| 9 | Chain wheel 72 | 1 | 22-042 |
| 10 | Support axle | 1 | 22-015 |
| 11 | Screw | 4 | 22-147 |
| 13 | Guard axle | 1 | 22-012 |
| 14 | Off-set ring | 1 | 22-145 |
| 15 | Screw | 7 | 22-073 |
| 16 | Screw | 2 | 22-064 |
| 17 | Spring washer | 10 | 22-090 |
| 18 | Washer | 5 | 22-085 |
| 19 | Chain wheel 15 | 2 | 22-043 |
| 20 | Spiral support | 1 | 22-020 |
| 21 | Screw | 4 | 22-063 |
| 22 | Bearing 6205 | 1 | 22-055 |
| 23 | Key | 1 | 22-056 |
| 24 | Mixing Axle | 1 | 22-010 |

| Item | Description | Qty | 930003T |
|---|---|---|---|
| 42 | Rubber shoe | 4 | 22-034 |
| 43 | wheel with stopper | 2 | 22-031 |
| 44 | Motor | 1 | 22-046 |
| 45 | Top cover | 1 | 22-009 |
| 47 | Nylon ring | 1 | 22-029 |
| 48 | Screw | 4 | 22-070 |
| 54 | Wheel | 2 | 22-032 |
| 58 | Transit ring | 1 | 22-093 |
| 60 | Screw | 4 | 22-072 |
| 61 | Gear box | 1 | 22-047 |
| 62 | Screw | 16 | 22-068 |
| 63 | Back cover | 1 | 22-010 |
| 69 | Chain | 1 | 22-040 |
| 70 | Chain wheel 29 | 1 | 22-045 |
| 71 | Bearing Connector | 1 | 22-021 |
| 72 | Washer | 4 | 22-083 |
| 73 | Spring washer | 8 | 22-089 |
| 74 | Screw | 4 | 22-060 |
| 76 | Key | 2 | 22-056 |
| 84 | Key | 1 | 22-057 |
| 85 | Screw | 1 | 22-148 |

| Item | Description | Qty | 930003T |
|---|---|---|---|
| 25 | Spiral | 1 | 22-004 |
| 27 | Cable fixer | | 22-110 |
| 28 | Cable | 1 | 22-125 |
| 33 | Divider | 1 | 22-003 |
| 34 | Screw | 2 | 22-064 |
| 39 | Side cover | 1 | 33-080 |
| 41 | foot | 4 | 22-033 |

| Item | Description | Qty | 930003T |
|---|---|---|---|
| 86 | Micro switch | 1 | 22-094 |
| 87 | Structure | 1 | 33-079 |
| 96 | Control switch | 1 | 10-029 |
| 102 | Transmission axles | 1 | 22-175 |
| 103 | Water shield | 1 | 22-187 |
| 104 | Adjusting screw | 2 | 22-192 |
| | | | |

## 2. Warning

**2.1** Keep your working area in order. Disorder can cause dangerous accidents.

**2.2** Consider environmental conditions. Do not use the machine in humid, wet or badly lit environments; close all inflammable liquids or gas.

**2.3** Make sure water and heat sources are at safe distance.

**2.4** Keep away form children and non authorized personnel.

**2.5** Be sure to use right voltage before using

**2.6** Dress appropriately .Do not wear hanging clothes or any items that can be caught in the machine. Use no-slip shoes. For hygiene and safety keep your hair tied back and wears protective gloves.

**2.7** Protect the cable. Do not pull the cable to extract the plug. Do not leave the cable near high temperatures, sharp objects, water or solvents.

**2.8** Avoid insecure positions. Find the best surface to ensure the machine is balanced.

**2.9** Take the plug out when the machine is not in use, before cleaning, maintenance and moving it.

**2.10** Do not use further extensions.

**2.11** Check that the machine is not damaged. Before using the machine carefully check that all security devices are working. Check that: the mobile parts are not blocked, there are not any parts damaged, all the parts have been set up correctly and all the conditions that could influence the regular functioning of the machine are in working order.

**2.12** When installing or repairing the machine, you should ask the qualified personnel and make sure that they are using the original spare parts before installing or repairing. The non compliance with these rules can be dangerous for the user.

## 3.Installation instruction:

**3.1** The machine must be installed in dry, drafty and bright environmental condition.

**3.2** Please place / position the machine on a flat and firm place; you can put it on a workbench whose height fits (equal) to you, and leave a space around it of 50 cm for easier usage and cleaning.

**3.3** The machine is constructed to have IPX1 protection level.

**3.4** The electric network must be provided with an automatic differential switch having characteristics suitable to those of the machine, in which the opening distance between the contacts must be of at least 3 mm. Most of all it is necessary a good ground system. Verify that the electrical set-up corresponds with the numbers of the specification (7) found and on the small label at the back of the machine.

**3.5** The connections type Y of the machine with the electric network is made by means of an operation cable, which is provided with a plug only in the single-phase model. As far as the three-phase machines are concerned it is necessary to put together the cable and a normalized and polarized plug.

**3.6** The plug must be easily accessible, must not require any kind of movement. The cable from the machine to the wail plug must not be pulled tightly, also do not rest the machine on the cable.

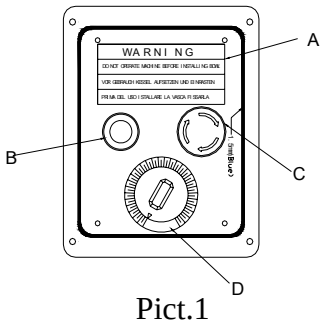
# 4. Operation instruction:

The machines are provided with the following operation and safety devices：

## 4.1 Operating devices

### 4.1.1 Sing-phase or Three-phase machines (930002T/M 930004/5T models):

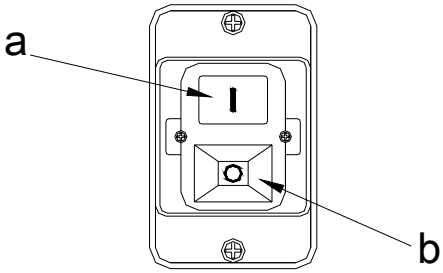
A. Warning (English, Germany, Italian)
B. Green button: Operating
C. Red button: Emergency stop
D. Timer




Pict.1

### 4.1.2 Sing-phase or Three-phase machines (930001T/M/930003T model):

a. Green button: Operating(Pict.2)
b. Red button: Stop




Pict.2

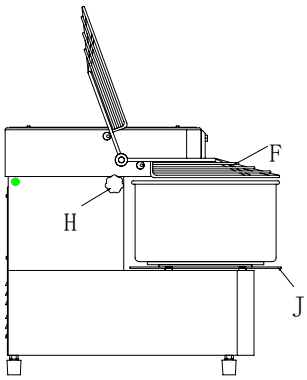
## 4.2 Safety Device

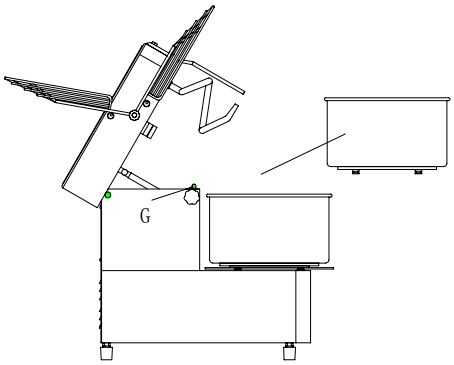
### 4.2.1 Sing-phase or Three-phase machines (930002T/M 930004/5T models):

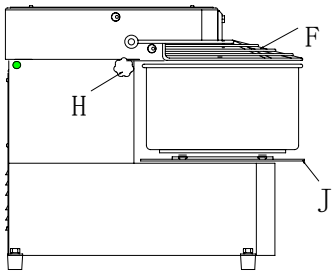
F. Safety Guard (Auto-stop when the guard is up)
G. Micro-switch (Non-operation when head is lifted up)
H. Locker (Pict.3)
J. Locking Flange

**Warning:**
**The safety devices are applicable when:**

- **Raising the safety guard F (pict.4). The machine stops**
- **Raising the head (by means of Locker the machine does not start**




Pict.3 Pict.4 Pict.5

Before operating the machine, the safety guard **F** must be completely lowered (pict.5), and that the head is down and locked by the Locker **H** (this must be completely inserted).
After inserting the plug the machine is ready to use.

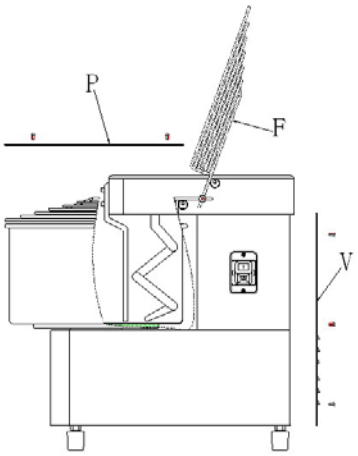
### 4.2.2 Sing-phase or Three-phase machines (930001T/M/930003T model):

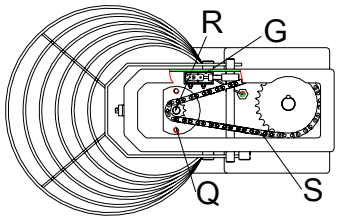
F. Safety guard (Pict.6)
G. Micro-switch(Auto-stop when the guard is up)

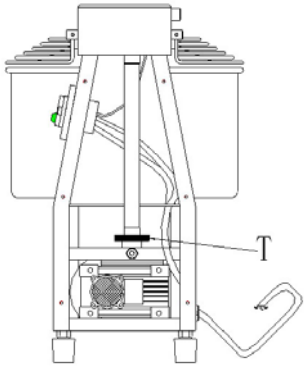
**Warning**
**The safety devices are applicable when:**

- **Raising the safety guard F (pict.6). The machine stops**

-




Pict.6 Pict.7 Pict.8

Before operating the machine, the safety guard **F** must be completely lowered (pict.6)

## 4.3 Working test

### 4.3.1 930002T/M 930004/5T models:

**Operating:** Set timer D and push the Green button **B** to start the bowl and the hook (Pict.1).
**Stop:** Push the red button **C** to stop the bowl and the hook.

In order to operate the machine again after the stop due to the raising of the safety guard **F** or to the activating of the emergency button **C** it is necessary to proceed as follows: Lower again and completely the safety guard **F**, release the button **C** by rotating it clockwise, as show by the arrow, and push the operating button **B.**

### 4.3.2 930001T/M/930003T models:

**Operating:** Push the green button **a** to start the bowl and the spiral (Pict.2)
**Stop:** Push the red button **b**.

In order to operate the machine again after the stop due to the raising of the safety guard **F** it is necessary to proceed as follows: lower again and completely the safety guard **F**.

## Note:

**For 3 phase machine, if the rotation of the bowl is opposite to that shown by the arrow, it is necessary to follow these indications for the connection:**

- Stop the machine
- Take the 2 phase wire out
- Reverse the wire connection position of two phases (example: L1 with L2 and vice versa)
- Restart the machine and verify if the bowl is rotating in the right direction.

**Start the machine without loading, let it run for about one minute and verify that it is functioning perfectly**.

## 4.4 Usage of the machine

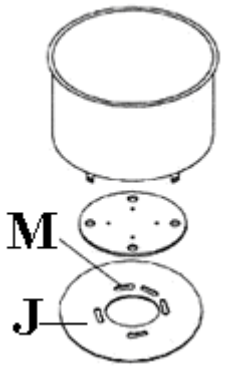
For **930002T/M 930004/5T** models, after lifted up the safety guard **F**, pour ingredients to the bowl, close the safety guard, and press the operating switch **B,** with timer setting.
For **930001T/M/930003T** models, after lifted up the safety guard **F**, pour ingredients to the bowl, close the safety guard, and press the operating switch **a**.

The movement made by the hook, which is synchronized with the rotation of the bowl, gives a mixer of flour, water, salt, yeast and other eventual ingredients till you obtain a mixture of the consistence required.

If necessary, in order to modify the characteristics and/or the consistence of the initial dough, pour the ingredients through the safety guard **F.**

When work cycle is completed, leave the machine on hold, lift up the safety guard **F** to maximum opening, take the mixture out, proceed to cleaning of the machine following the indication at 5.1.

**Note:** For **930002T/M 930004/5T** models, please stop the machine, unplug the machine, raise the safety guard **F** completely, pull the Locker **H** as far as the head is un-lock, and raise the head by means of the little piston underneath. Then rotate clockwise the Locking Flange **J** as far as the bowl is unlocked, raise the bowl and take it out of the machine. Finally take off the dough.
After cleaning, put the bowl back on, and make sure that the four pins underneath (pict.9) are correctly fixed in the four holes **M** of the machine; then lock the bowl rotating clockwise the Locking Flange **J**. Put the head down pushing it downwards as far as it is blocked by the Locker **H**.



Pict.9

## 4.5 Usage of the machine provided with timer(For 930002T/M 930004/5T models)

The timer is an electromechanical device that allows to program from 1 to 30 minutes
- The work-time of the machine by rotating the knob 0 in the desired position.
- Operate the machine following the instructions of 4.4.
- Once the set time is over, the timer stops the machine.

**Important**
**Before taking off the dough, make sure the timer are in position “0”.**

# 5. Maintenance

**Warning:**

**Before starting any kind of maintenance or cleaning, you must cut off the power supply.**

In any case of malfunctioning or damage of the machine, you must apply for authorized assistance from the manufacturer or dealer.

## 5.1 Cleaning

The cleaning must be done every time the machine has been used following all the rules to prevent malfunctioning of the machine and for hygienic purposes.

Using a wooden or plastic palate first clean the residue of dough, then with a soft sponge and warm water accurately clean the bowl, the hook, the leading shaft and the safety guard, dry with kitchen paper.

**Warning**

**We recommend not to use any kind of chemical product abrasive or corrosive. Absolutely avoid using spraying water, sharp tools, rough or abrasive objects, metal/sponges etc, which can damage the surfaces and be dangerous from an hygienic point of view.**

To maintain the efficiency and security of the machine it is necessary to proceed with periodical maintenance (every 6 months) of the following indications:

## 5.2 Tensioning of the upper chain

### 5.2.1 930002T/M 930004/5T models:

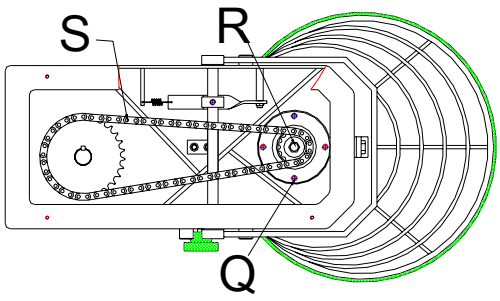
The chain must be tightened.: If the chain is loose or rotation of the hook is not constant, Unscrew the cover **P**, you can find out by checking the screws **Q** (Pict.10) or pull the support of the hook **R** as far as the tightening is achieved Then Put the cover **P** on once more and fix it.

### 5.2.2 930001T/M/930003T models:

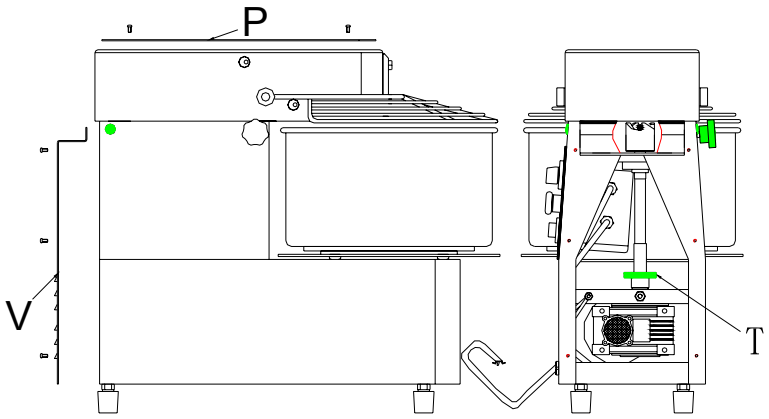
The chain must be tensioned it, by checking it, it becomes loose or if the rotation of the hook is not constant: Unscrew the cover **P**, (Pict.6) loosen the screws **Q**, Pull the support of the hook **R** as far as the tension the chain is optimized. Lock the support **R** with the screws **Q**, Put the cover **P** on once more and fix it.

## 5.3 Lubricating the chains

After unscrewing the fixing screws, take away the cover **P** and the back panels **V**, put reasonable amount of proper grease on the chains **S &T** (For **930002T/M 930004/5T** models pict.10-11, For **930001T/M/930003T** models pict.6-8) , sufficient to lubricate all the links of the chain. Once this is done, mount the two panels and secure again with screws.




Pict.10




Pict.11

## 6. Trouble shooting

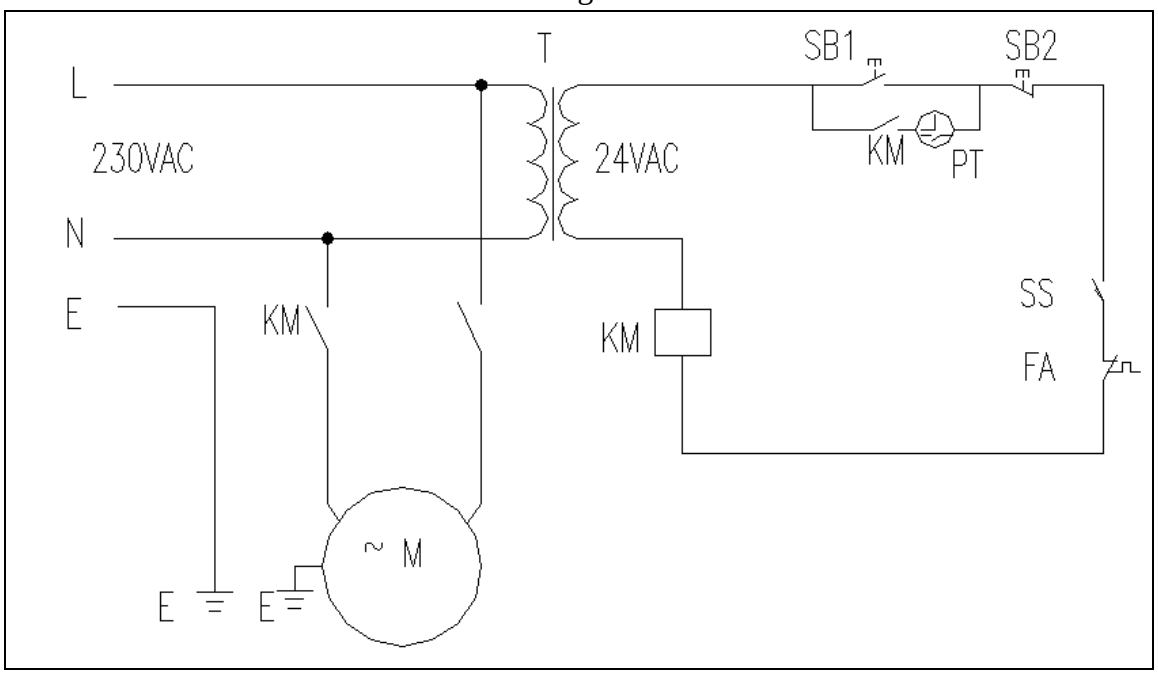
| Trouble | Cause | Solution |
|---|---|---|
| The machine does not start | 1. Lack of electric energy in the power supply<br>2. The Emergency stop switch is locked<br>3. The safety guard and/or the head are up<br>4. The timer is in position “0” | 1. Check the main switch, the plug, the wire.<br>2. Rotate the button following the direction of the arrow.<br>3. Close both the safety guard and the head correctly.<br>4. Rotate the knob of the timer from 1 to 30 minutes |
| The hook turns inconstantly | The chain is loose | Stretch the chain following the instructions as 5.2 |

## 7.Specification

| Model. No | Voltage (V) | Power (KW) | Hook speed(rpm) | Bowl speed(rpm) | Bowl size | Gear box | Max Dough capacity (KG) |
|---|---|---|---|---|---|---|---|
| 930002M | 230 | 0.75KW | 90.2 | 9.1 | 360*210 | #50 | 18KG |
| 930002T | 380 | 1.1KW | 90.2 | 9.1 | 360*210 | #50 | 18KG |
| 930004T | 380 | 1.1KW | 98 | 9.8 | 450*210 | #50 | 25KG |
| 930005T | 380 | 2KW | 98 | 9.8 | 500*270 | #75 | 38KG |
| 93000IT | 380 | 0.55KW | 92 | 9.8 | 360*210 | #40 | 18KG |
| 930001M | 230 | 0.37kw | 92 | 9.8 | 360*210 | #40 | 18KG |
| 930003T | 380 | 1.1kw | 90.2 | 9.1 | 450*210 | #50 | 25KG |

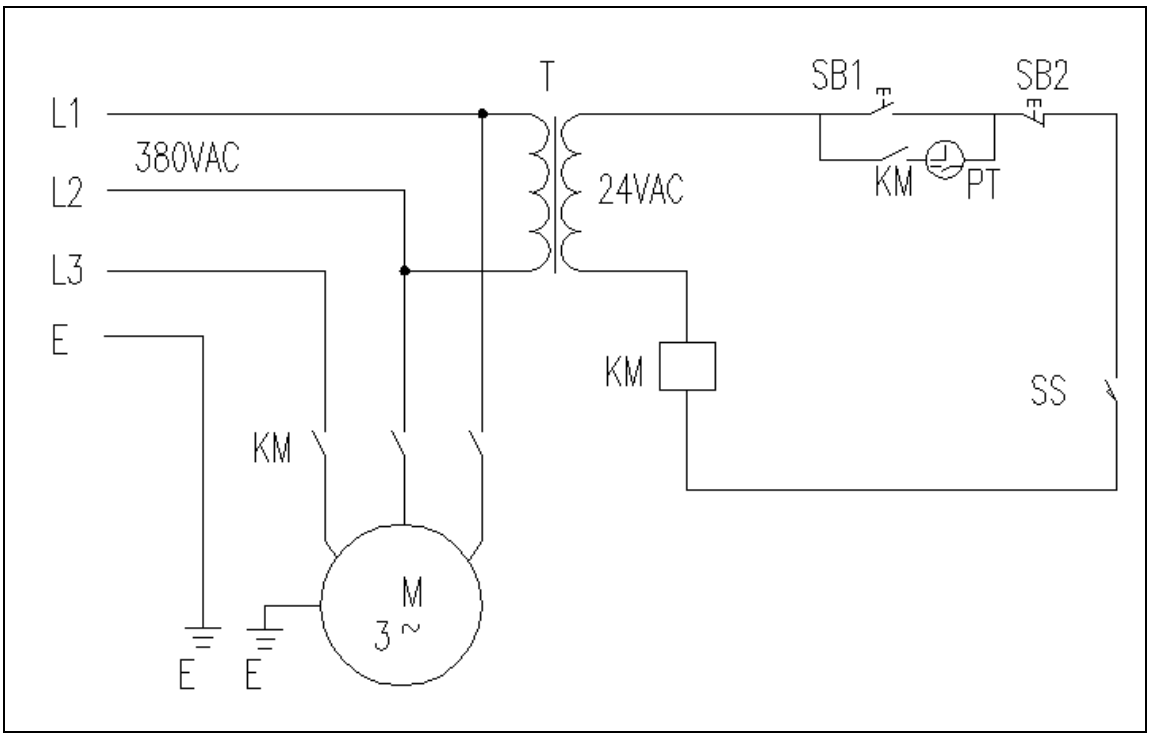
## 8. Electric diagram

930002M Single Phase Models



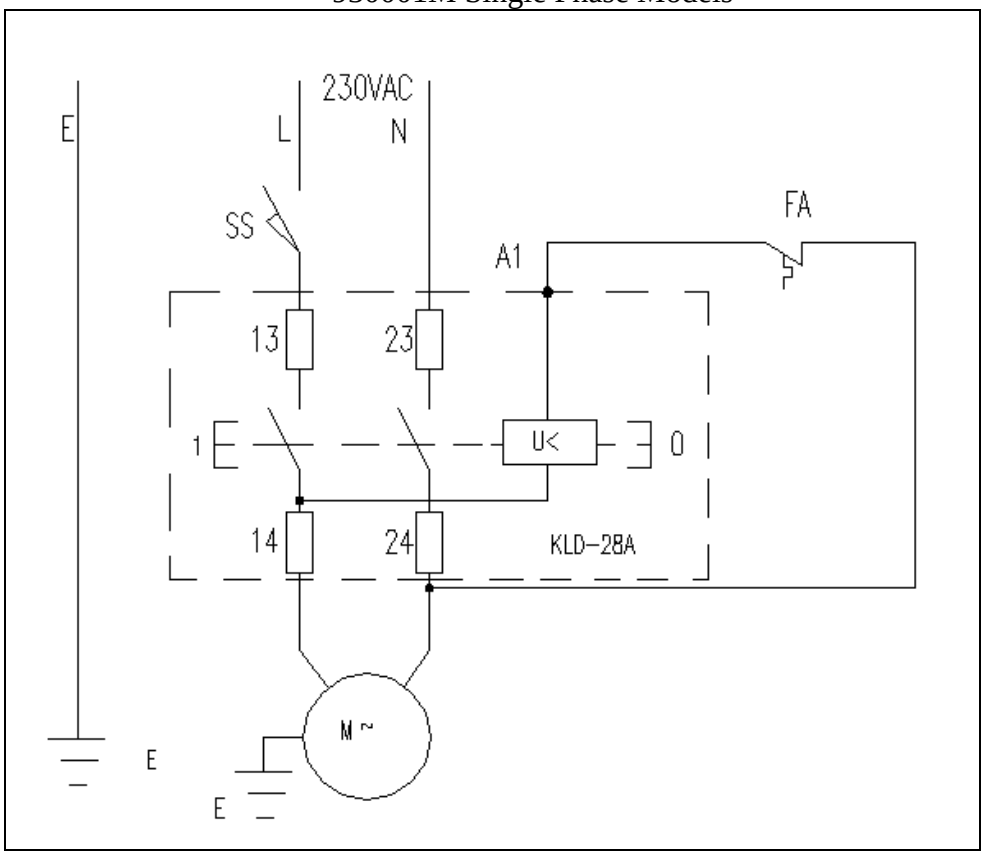

KM: Contactor T: Transformer SB1: Green Button SB2: Red Button SS: Micro Switch
PT: Timer M: Motor FA: Thermo-protection of Engine

930002/4/5T Three Phase Models



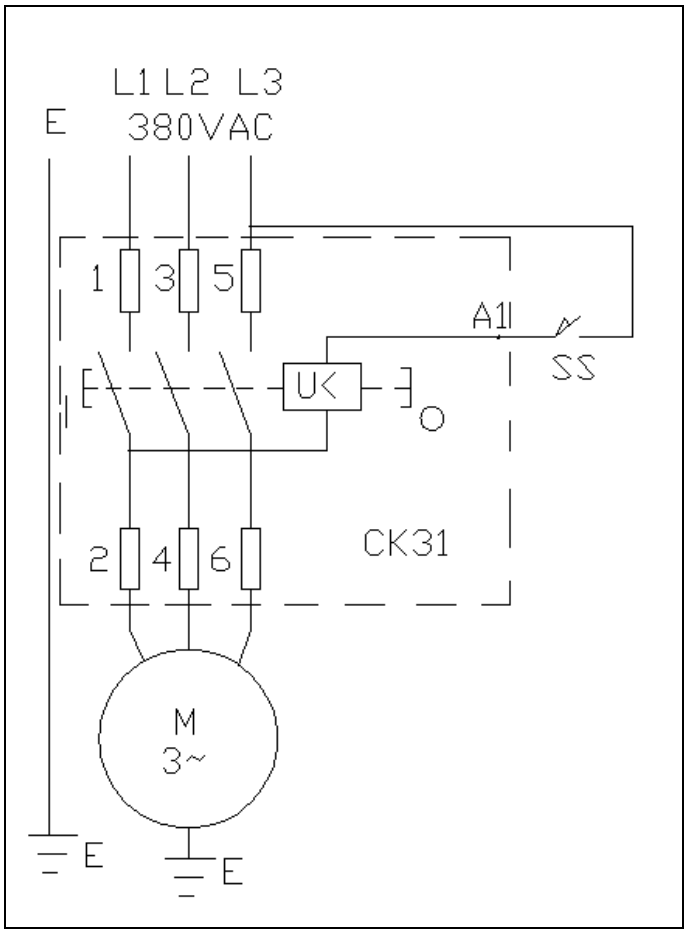

KM: Contactor T: Transformer SB1: Green Button SB2: Red Button SS: Micro Switch
PT: Timer M: Motor

930001M Single Phase Models




SS: Micro Switch M: Motor Power Source Wire: L: (Red) N:(blue) E:(yellow-green)
FA: Thermo-protection of Engine KLD-28A: General Switch

930001T/930003T Three Phase Models




SS: Micro Switch M: Motor
CK31: Switch
Power Source Wire:
L1(blue) L2(black) L3(red)
Ground Wire
E:(yellow-green)